

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1- 26. (Canceled).

27. (Currently Amended) A method of encoding a speech signal utilizing CELP speech encoding, said method comprising:

receiving a plurality of unencoded speech signal blocks in a CELP speech encoder; and

encoding the speech signal blocks utilizing a multi-codebook fixed bitrate CELP signal block encoding method, process, said encoding step including the steps of:

cyclically generating a sequence of excitation codebook identifications;

accessing the cyclically generated sequence of excitation codebook identifications;

identifying, for each signal block of [[a]] the plurality of unencoded signal blocks, a corresponding excitation codebook identification from said cyclically generated sequence of excitation codebook identifications; and

encoding each signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said identifying step is defined by stepping through each excitation codebook identification of said cyclically generated sequence of excitation codebook identifications, each excitation codebook identification corresponding to one excitation codebook of a plurality of excitation codebooks.

28. (Currently Amended) A method of encoding a speech signal utilizing CELP speech encoding, said method comprising:

receiving a plurality of unencoded speech signal blocks in a CELP speech encoder; and

encoding the speech signal blocks utilizing a multi-codebook fixed bitrate CELP signal block encoding method; process, said encoding step including the steps of:

pseudo-randomly generating a sequence of excitation codebook identifications;

accessing the pseudo-randomly generated sequence of excitation codebook identifications;

identifying, for each signal block of [[a]] the plurality of unencoded signal blocks, a corresponding excitation codebook identification from said pseudo-randomly generated sequence of excitation codebook identifications; and

encoding each signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said identifying step is defined by stepping through each excitation codebook identification of said pseudo-randomly generated sequence of excitation codebook identifications, each excitation codebook identification corresponding to one excitation codebook of a plurality of excitation codebooks.

29. (Currently Amended) A method of decoding a speech signal utilizing CELP speech decoding, said method comprising:

receiving a plurality of encoded speech signal blocks in a CELP speech decoder;
and

decoding the speech signal blocks utilizing a multi-codebook fixed bitrate CELP signal block decoding method; process, said decoding step including the steps of:

cyclically generating a sequence of excitation codebook identifications;

accessing the cyclically generated sequence of excitation codebook identifications;

identifying, for each signal block of [[a]] the plurality of encoded signal blocks, a corresponding excitation codebook identification from said cyclically generated sequence of excitation codebook identifications; and

decoding each encoded signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said identifying step is defined by stepping through each excitation codebook identification of said cyclically generated sequence of excitation codebook identifications, each excitation codebook identification corresponding to one excitation codebook of a plurality of excitation codebooks.

30. (Currently Amended) A method of decoding a speech signal utilizing CELP speech decoding, said method comprising:

receiving a plurality of encoded speech signal blocks in a CELP speech decoder;
and

decoding the speech signal blocks utilizing a multi-codebook fixed bitrate CELP signal block decoding method; process, said decoding step including the steps of:

pseudo-randomly generating a sequence of excitation codebook identifications;

accessing the pseudo-randomly generated sequence of excitation codebook identifications;

identifying, for each signal block of [[a]] the plurality of encoded signal blocks, a corresponding excitation codebook identification from said pseudo-randomly generated sequence of excitation codebook identifications; and

decoding each encoded signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said identifying step is defined by stepping through each excitation codebook identification of said pseudo-randomly generated sequence of excitation codebook identifications, each excitation codebook identification corresponding to one excitation codebook of a plurality of excitation codebooks.

31. (Currently Amended) A ~~multi-codebook fixed bitrate CELP signal block CELP speech~~ encoder, comprising:

means for receiving a plurality of unencoded speech signal blocks; and

a multi-codebook fixed bitrate CELP signal block encoding circuit for encoding the speech signal blocks, said circuit comprising;

means for cyclically generating a sequence of excitation codebook identifications;

means for accessing the cyclically sequence of excitation codebook identifications;

means for identifying, for each signal block of [[a]] the plurality of unencoded signal blocks, a corresponding excitation codebook identification from said cyclically generated sequence of excitation codebook identifications; and

means for encoding each signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said cyclically generated sequence of excitation codebook identifications comprises a plurality of different excitation codebook identifications, each excitation codebook identification of said plurality of different excitation codebook identifications corresponding to one excitation codebook of a plurality of different excitation codebooks.

32. (Currently Amended) A ~~multi-codebook fixed bitrate CELP signal block~~ CELP speech decoder, comprising:

means for receiving a plurality of encoded speech signal blocks; and

a multi-codebook fixed bitrate CELP signal block decoding circuit for decoding the speech signal blocks, said circuit comprising:

means for cyclically generating a sequence of excitation codebook identifications;

means for accessing the cyclically sequence of excitation codebook identifications;

means for identifying, for each signal block of [[a]] the plurality of encoded signal blocks, a corresponding excitation codebook identification from said cyclically generated sequence of excitation codebook identifications; and

means for decoding each encoded signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said cyclically generated sequence of excitation codebook identifications comprises a plurality of different excitation codebook identifications, each excitation

codebook identification of said plurality of different excitation codebook identifications corresponding to one excitation codebook of a plurality of different excitation codebooks.

33. (Currently Amended) A ~~multi-codebook fixed bitrate CELP signal block~~ CELP speech encoder, comprising:

means for receiving a plurality of unencoded speech signal blocks; and

a multi-codebook fixed bitrate CELP signal block encoding circuit for encoding the speech signal blocks, said circuit comprising:

means for pseudo-randomly generating a sequence of excitation codebook identifications;

means for accessing the pseudo-randomly generated sequence of excitation codebook identifications;

means for identifying, for each signal block of ~~[[a]]~~ the plurality of unencoded signal blocks, a corresponding excitation codebook identification from said pseudo-randomly generated sequence of excitation codebook identifications; and

means for encoding each signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said pseudo-randomly generated sequence of excitation codebook identifications comprises a plurality of different excitation codebook identifications, each excitation codebook identification of said plurality of different excitation codebook identifications corresponding to one excitation codebook of a plurality of different excitation codebooks.

34. (Currently Amended) A ~~multi-codebook fixed bitrate CELP signal block~~ CELP speech decoder, comprising:

means for receiving a plurality of encoded speech signal blocks; and

a multi-codebook fixed bitrate CELP signal block decoding circuit for decoding the speech signal blocks, said circuit comprising:

means for pseudo-randomly generating a sequence of excitation codebook identifications;

means for accessing the pseudo-randomly generated sequence of excitation codebook identifications;

means for identifying, for each signal block of [[a]] the plurality of encoded signal blocks, a corresponding excitation codebook identification from said cyclically generated sequence of excitation codebook identifications; and

means for decoding each encoded signal block by using an excitation codebook corresponding to said identified excitation codebook identification;

wherein said pseudo-randomly generated sequence of excitation codebook identifications comprises a plurality of different excitation codebook identifications, each excitation codebook identification of said plurality of different excitation codebook identifications corresponding to one excitation codebook of a plurality of different excitation codebooks.